

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF  
CALIFORNIA**

Order Instituting Rulemaking to Examine the  
Commission's Future Energy Efficiency Policies,  
Administration and Programs.

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Rulemaking 01-08-028  
(Filed August 23, 2001)

**Response to Administration Law Judge's Ruling Regarding  
Evaluation, Measurement & Verification of Local Energy  
Efficiency Programs**

**EM&V Contractor Qualifications  
And Notification of Interest**

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## TABLE OF CONTENTS

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1. Introduction	2
2. Company Qualifications	
2.1 Firm Qualifications and Experience	3
2.2 Software Capabilities	4
2.3 Established Track Record	4
2.4 Foreign Language Skills	4
2.5 EM&V Capabilities	4
3. Selected Programs for EM&V	
3.1 Selected Programs for Evaluation, Measurement and Verification	6
3.2 Reasons Why The Commission Might Not Select Power Logic	6
4. Current and Past Project Descriptions	7
5. Staff Resumes	11
6. Certificate of Service	15

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# **1 INTRODUCTION**

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Power Logic is pleased to respond to the ALJ ruling of 6/17/02 that requested contractors interested in EM&V to submit their qualifications to the Commission for consideration. We request to be added to the Commission's list of qualified third party programs. Within this document is an overview of Power Logic, our areas of expertise, a primary list of third party programs we are qualified to evaluate in the service territories of SCE, SCG and SDG&E, brief descriptions of past and present projects in our areas of expertise and staff resumes.

Since Power Logic did not submit any proposals for local energy efficiency programs or are we listed as a subcontractor with any third party firm that was awarded a local energy efficiency program. We currently see no potential or actual conflicts of interest should we be selected to evaluate any program.

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## **2 COMPANY QUALIFICATIONS**

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### **2.1 Firm Qualifications and Experience**

Power Logic was formed in 1987 to provide energy management services to utilities, engineering and consulting firms, commercial and residential customers. We are based in San Diego and specialize in energy efficiency including energy audits, end use monitoring/load profiling and new construction and tenant improvement design reviews. Areas of expertise include:

- New construction and tenant improvement design reviews for energy efficiency and Title 24 compliance. Power Logic has performed over 2,000 commercial and residential design reviews for San Diego Gas & Electric Company and the Gas Company utilizing energy software programs such as EnergyPro, Micropas, HAP and NCcalc. Parameters evaluated typically include lighting, mechanical, building shell and process equipment.
- Energy audits of existing commercial and residential (multifamily) facilities. Staff experience includes energy audits over 1,500 buildings including hospitals, restaurants, office buildings, manufacturing, retail, municipal & military facilities and condominiums.
- Equipment and building end use monitoring/load profiling to determine energy usage, equipment performance and energy conservation options.

As a result of this diverse experience, Power Logic's staff is highly experienced evaluating all types of lighting, HVAC and building shell system designs and component characteristics.

To assure the highest level of quality, we may make selective use of specialists from various fields with whom we have longstanding relationships including:

- Thermal Energy Storage
- Refrigeration
- Gas cooling

## **2.2 Software Capabilities**

Power Logic has in-house software expertise to develop tracking and reporting software as required. We have successfully developed specialized Microsoft based software for various commercial energy efficiency programs administered by SDG&E including the Savings By Design Program, Regulatory (Exhaust Fan EM&V Study) and Federal Accounts (Exterior Lighting Audits for Naval Facilities).

In addition we have expertise with building energy analysis software such as Energy Pro 3.11, DOE-2, Micropas 6.0, NCcalc and Boxcar Pro. Regardless of the software used, our end product is user friendly rather than proprietary software that is frequently not available for review or analysis by the client.

## **2.3 Established Track Record**

Power Logic has a longstanding and successful track record working with our clients and completing projects on time or ahead of schedule. We have successfully provided services for the following programs and clients:

- Title 24+ Program (1988-1991) SDG&E
- Savings By Design (1991-present) SDG&E
- Home Energy Partnership (2001) SDG&E
- Regulatory - Garage Exhaust Fan EM&V Study (2001) SDG&E
- Savings By Design - (2001 - present) – The Gas Company
- Federal Accounts –Exterior Lighting Audits – Navy Bases (2001) SDG&E
- Hydro Project – San Geronio Pass Water Agency – EM&V (2000-present)

## **2.4 Foreign Language Skills**

Power Logic has in-house staff fluent in Spanish and can address Asian languages if needed using interpreters from either community based organizations or our own established contacts. Many firms are not able to address foreign language issues, a common obstacle when communicating with small hard-to-reach businesses and residential customers which is the focus of a number of CPUC approved programs.

## **2.5 EM&V Capabilities**

We are qualified to provide the consulting services needed to effectively meet the objectives of commercial and residential EM&V projects related to:

- Energy Audits
- End Use Monitoring- Load Profiling.
- Data Collection and Analysis
- New Construction Design Reviews/Title 24
- Database Design and Management

From our experience in these areas we have a solid platform from which to provide EM&V services. For example, we have experience with a variety of data loggers and measurement equipment. Parameters that we can measure include:

KW	Light Levels (fc/lux)	Pressure
KWH	Voltage	Temperature
Power Factor	Amps	Humidity
Voltage	On/Off or Run Times	Flow Rates (cfs/gpm)

As an integral part of EM&V, we can provide statistical analysis as needed including:

Calculate sample sizes

Calculate the appropriate error bounds

Ratio calculations by:

- ❖ Market Segments
- ❖ Commercial or Residential
- ❖ Climate Zones
- ❖ Income, etc.

Power Logic utilizes the following guidelines as the basis for developing EM&V standards for a project:

- North American Energy Measurement and Verification Protocol (NEMVP 2001 Edition)
- Federal Energy Management Program (FEMP) - M&V Guidelines Version 2.2
- International Performance Measurement and Verification Protocol (IPMVP)
- American Society of Heating Refrigeration and Air-Conditioning Contractors (ASHRAE) - Guide 14P

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## **3      SELECTED PROGRAMS FOR EM&V**

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### **3.1      Selected Programs for Evaluation, Measurement and Verification**

The following table lists the local energy efficiency programs Power Logic is qualified to evaluate:

Proposal No.	Proposal Sponsor	Program Title	Previous Projects w/Implementer	Potential Conflicts
245-02	Ecos Consulting	LiteVend	None	None
258-02	Ecos Consulting	Energy Star CFL Program for Small Hardware and Grocery Retailers	None	None
284-02	City of San Diego	Whole House Energy Retrofit Program	None	None
287-02	Richard Heath & Associates	Mobile Home Energy Efficiency & Education Program	See Section 4	None
292-02	D&R International	Residential New Construction Appliances & Lighting	None	None
305-02	San Diego Regional Energy Office	Direct Install Small Commercial Program	None	None
	Other Programs at Implementers Request		None	None

### **3.2      Reasons Why the Commission Might Not Select Power Logic**

There are no reasons why the Commission might not select Power Logic as an EM&V contractor. We have no outstanding state tax liens, present or former bankruptcy, pending civil or criminal litigation or other proceedings, license suspensions or other similar actions, or criminal convictions. There are no factors that might lead a reasonable person to question whether Power Logic is actually independent of any sponsors.

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## CURRENT AND PAST PROJECT DESCRIPTIONS

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**Client:** SDG&E – Mass Markets

**Program:** Savings By Design

**Year:** 1993 - present

**Description:** Performing design reviews for new commercial construction and tenant improvement projects. Conducting design reviews of construction drawings, revising Title 24 documents, providing recommendations that will result in high performance buildings. Recommendations typically cover lighting, HVAC equipment, and building shells. Power Logic has significant expertise with utilizing EnergyPro 3.11 for building energy design and analysis. Economic analysis may include simple payback, return on investment and life cycle costing. To date, over 2,000 design reviews have been completed including high rise office buildings, hotels, restaurants, convenience stores, medical offices, biotech firms, manufacturing and governmental facilities. Estimated square footage of projects has ranged from 2,000 to 850,000 sf.

**Client:** SDG&E - Mass Markets

**Project:** Garage Exhaust Fan EM&V Study

**Client:** SDG&E - Regulatory

**Year:** 2001

**Description:** Installation and measurement of data loggers to monitor run times of exhaust fans in three large parking garages to document the effectiveness and energy savings of carbon monoxide detectors.

**Client:** SDG&E – Federal Accounts

**Project:** SDG&E – US Navy Exterior Lighting Audits

**Year:** 2001

**Description:** Energy studies of three large Naval facilities to develop energy projects for retrofitting existing exterior lighting systems to high efficiency lighting systems. Facilities audited included:

- North Island Naval Air Station, Coronado
- Naval Station/32<sup>nd</sup> Street, San Diego
- Point Loma Sub Base/ASW Training Facility, San Diego

The project covered over 2,000 buildings



**Client:** **Richard Heath & Associates**

**Program:** Energy Study – Jaffee Court Apartments

**Year:** 2000

**Description:** Comprehensive energy study of 211 unit apartment complex interior and exterior lighting, laundry facilities and room AC units. Developed recommendations with cost analysis, simple payback and projected energy savings.

**Client:** **San Geronio Pass Water Agency**

**Program:** EM&V – San Geronio Hydro Project

**Year:** 2000-present

**Description:** Design and installation of Sutron digital data recorders and transducers to measure water flow in flumes for a 2.4 MW hydroelectric project. Providing data analysis and technical support to lead water agency for FERC re-licensing and reconstruction of flume and powerhouses.

**Client:** **SDG&E**

**Program:** SDG&E - "Title 24+"

**Year:** 1988-1992

**Description:** Performed design reviews and in depth feasibility studies of potential energy conservation measures for new commercial construction projects. Reports were developed under subcontract with SDG&E to encourage design changes that would result in a more energy efficient building. Conducted over 50 design reviews under subcontract with a local engineering firm. Buildings were evaluated from design drawings (building shell, electrical and mechanical) of buildings prior to actual construction. Some measures were developed using computer models. Measures studied included lighting, HVAC, building shells, food service equipment, water conservation, swimming pools, laundry facilities and process loads.

**Client:** **California Energy Commission**

**Program:** California Energy Commission (CEC) "Energy Partnership Program"

**Prime:** KSEngineers

**Year:** 1992 - 1995

**Description:** In-depth feasibility study - subcontracted for lighting, daylighting, food service equipment portions of full energy audits for various local government agencies - estimated typical square footage of projects - 100,000 - 250,000 sf. Recommended various energy efficient lighting retrofits including skylighting, T8 lamps, electronic ballasts, specular reflectors, control of various pumps,

athletic field lighting redesigns.

- City of San Bernardino - selected buildings
- County of Tulare - selected buildings
- Contra Costa County - data processing center
- City of Westminster - municipal building complex
- County of Kern - selected buildings
- City of West Covina - municipal building complex

**Client:** US Navy

**Project:** NASNI - Naval Supply Center, Coronado, CA - lighting survey

**Prime:** KSEngineers

**Year:** 1991

**Description:** In-depth feasibility study - lighting and HVAC energy audit of eight existing buildings - estimated square footage - 500,000 sf. Recommended various energy efficient lighting retrofits over existing incandescent and HID systems.

**Client:** U.S. Navy

**Project:** Balboa Naval Hospital, San Diego - lighting survey

**Prime:** KSEngineers

**Year:** 1991

**Description:** In-depth feasibility study - subcontracted to perform lighting retrofit of existing 1,000,000 sf hospital complex, analysis of existing compressed air system recommendations with data logging and load profiling of compressed air systems. Recommended electronic ballasts, T8 lamps, new exit fixtures, specular reflectors, replacement of water cooled compressed air system with new air cooled system resulting in both reductions in energy, fresh water and sewer water costs.

**Client:** U.S. Navy

**Project:** Fleet Antisubmarine Warfare Training Center, San Diego

**Prime:** KSEngineers

**Year:** 1990

**Description:** Energy study of naval facility for lighting, HVAC, 400 Mhz motor generator sets utilizing data loggers including Drantex meters.

**Client:** **Coronado Shores Condominiums**

**Project:** Utility Rate Analysis, Coronado Shores Condominium #3, Coronado, CA

**Year:** 1987

**Description:** Evaluation of utility rates for high-rise condominium project. Changed client from flat rate demand schedule to "time of use" schedule resulting in 25%+ reduction in annual energy costs at no capital costs to client. Recommendations based on monitoring/load profiling of main utility meter and analysis of utility bills. Also proposed a hot water controller for boiler system that was implemented with an approximate 20% reduction in gas hot water costs.

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## **5      STAFF RESUMES**

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## EDUCATION

- Master of Science, Building Construction, School of Agriculture Engineering, Michigan State University, 1980
- Bachelor of Science, Building Construction, College of Natural Resources, Michigan State University, 1976

## PROFESSIONAL CERTIFICATION AND AFFILIATIONS

- CA “B” General Contractors License
- Certified Energy Manager
- Certified Energy Plans Examiner
- Association of Energy Engineers (AEE)
- ASHRAE
- CABEC

Ken Moss is an energy consultant with 20 years experience in energy auditing, new construction design reviews, building energy analysis, data logging/end use monitoring and utility rate analysis. Mr. Moss has worked as project manager at a consulting engineering firm developing comprehensive energy studies, energy/facilities manager for a major retailer and has extensive field experience as a commercial energy auditor.

## RELEVANT EXPERIENCE HIGHLIGHTS

### **Power Logic, San Diego, CA**

Principal - Providing services to engineering firms, commercial & residential projects, utilities and governmental agencies that require technical support in energy management. Services include energy audits, end use monitoring, building computer simulations, design reviews, Title 24, utility rate analysis, project management.

### **San Diego Regional Energy Office, San Diego, CA**

Program Manager – marketing of SDG&E’s New Construction Energy

Efficiency Program to local government agencies and design teams. Project management and oversight of engineering firms retained for energy studies.

### **Petco, San Diego, CA**

Energy Manager - Managed electric, gas, water and facility costs for retail chain with 462 stores nationwide and an energy budget of \$11 million. Developed a wide variety of energy projects generating over \$1.2 million in savings.

### **San Diego Housing Commission, San Diego, CA**

Housing Construction Specialist - Provided construction expertise to owners of multifamily and residential property participating in various government housing rehabilitation programs. Performed contract administration for the renovation over 400 residential and apartment projects with project costs ranging from \$3,000 to \$1.8 million.

### **South Coast Community Development, Dana Point, CA**

Project Superintendent - On-site supervision of 22 unit residential project with a budget of \$1 million dollars.

### **Popov Engineers, San Diego, CA**

Project Manager - Manager of Energy Department for mechanical/electrical consulting engineering firm. Developed over \$600,000 of comprehensive energy studies for naval facilities which included recommendations, calculations, cost estimates and economic analysis.

### **San Diego Gas & Electric, San Diego, CA**

Commercial/Industrial Energy Auditor – Performed over 800 energy audits for all types of SDG&E’s commercial customers.

**EDUCATION**

- B.S. Aerospace Engineering Technology, 1986  
Nothrop University, Los Angeles
- Mechanical Engineering, UCLA

**PROFESSIONAL CERTIFICATION AND AFFILIATIONS**

- Certified Energy Manager
- Certified Energy Analyst
- Certified Energy Auditor
- ASHRAE
- CABEC
- American Society of Hispanic Engineers (ASHE)

Cesar Rios has over 15 years experience in the energy industry, and has been involved in the development of various programs for residential/commercial/industrial customers. His experience includes EM&V projects for all of California's major utilities and ESCOs. His experience coupled with the talent of connecting with end-users has enabled him to effectively obtain valuable information to gauge the effectiveness of demand-side management programs.

**RELEVANT EXPERIENCE HIGHLIGHTS**

**Sempra Energy, San Diego, CA**

Director – Developed program to provide turnkey energy services to residential/commercial/industrial customers in Mexico, including energy audits, engineering/design, retrofit contracting, and financing.

**Enron**

Director – Developed and marketed energy programs to low-income and minority-owned businesses in California through channels including non-governmental organizations, community Chambers of Commerce, Business Improvement Development and Economic Development organizations.

**Enova/SDG&E, San Diego, CA**

Manager – Provided services to develop program to offer comprehensive energy audits, installations, financing and M&V to commercial customers in PG&E service territory. Responsible for pre-sales of program to customers by developing alliances with community based organizations, and other sales channels.

**ADM Assoc., Sacramento, CA**

Mechanical Engineer – Developed, managed programs and performed energy audit for over 2,000 commercial customers for utilities nationwide including SDG&E, So. Cal Gas, PG&E, SCE, LADWP, El Paso Electric, Entergy, CIPS and others. Programs ranged from evaluating utility energy efficiency programs, to performing comprehensive energy audits.

**Agencia de Alternativas Eficiente, Southern CA**

Principal – Provided comprehensive energy services to commercial customers located along the US/Mexico border. Services ranged from energy efficiency consulting to comprehensive retrofit services designed to maximize resources for customers with operations in both countries.

## Mike McCaffrey

Energy Analyst/Mechanical Engineer

### EDUCATION

Bachelor of Science,  
Mechanical  
Engineering, 1996  
Boston University

Mike McCaffrey joined Power Logic in 1999 as an energy analyst performing Title 24 design reviews using EnergyPro and developing software programs for energy analyses. Software projects include developing an instructional manual for an energy management system, utility rate analysis software packages and data analysis/presentation from data loggers. Software skills include EnergyPro and fluency in Microsoft Office applications, BASIC, TurboPascal, AutoCAD and MathCAD.

### RELEVANT EXPERIENCE HIGHLIGHTS

Power Logic, San Diego, CA

Energy Analyst – Develop software and perform energy analyses on lighting, mechanical systems, building envelop using custom software, EnergyPro 3.1, NCALC in order to determine energy savings for San Diego Gas & Electric's Savings by Design Program. Software development projects include instructional manuals for energy management systems, utility rate analysis spreadsheets, software for data analysis and evaluation from end-use monitoring equipment and web site enabled energy calculator for public use. Software skills include EnergyPro and fluency in Microsoft Office applications, Visual Basic for Applications, VBScript, JavaScript, HTML, TurboPascal, AutoCAD, Hyperion Essbase, SAP Business Warehouse.

Petco, San Diego, CA

Industrial Engineer – Responsible for development of working manuals, quality control and technical support for monitoring and programming of NOVAR energy management systems aimed at remotely controlling building operations at over 100 retail stores. In addition to developing utilities tracking software, developed software to produce reporting for budgeting, implementation and tracking of energy and infrastructure projects for over 500 stores nationwide.

Software Skills

Computer Languages - TurboPascal, IBM PC-compatible assembly language, Visual Basic for Applications, VBScript, Javascript, HTML

Computer software - EnergyPro 2.0- 3.1, Algor, AutoCAD 12, MathCAD, SAP Business Warehouse, Hyperion Essbase.

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## **6     CERTIFICATE OF SERVICE**

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I hereby certify that I have this day submitted a copy of EM&V Contractor Qualifications and Notification of Interest for Power Logic regarding R.01-08-028 *to* be mailed via electronic mail to each of the parties of record in this proceeding.

Executed at San Diego, California, July 1, 2002

Ken Moss - Principal

Power Logic